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(54) MAGNETIC BEARING DEVICE

(57)Abstract:

PURPOSE: To apply a magnetic bearing device to a large rotary machine to improve its operational reliability and maintenance ability by calculating a gap length between an electromagnet and a shaft from an exciting current value and an output of a force detector, and regulating the exciting current value to keep the eccentricity of a shaft within a fixed value.

CONSTITUTION: Gap length calculating means 30a, 30b determine gap lengths da, db between electromagnets 2a, 2b and a shaft 1 from the attracting force for the shaft 1, which is generated by each of the electromagnets 2a, 2b and detected by force detectors 10a, 10b, and an exciting current value detected by current detectors 20a, 20b. A regulator 43 regulates the exciting current fed to each of the electromagnets 2a, 2b through an exciting circuit 44 to make the eccentricity (da-db) of the shaft 1 attain to a set value δ o. Thus the eccentricity of the shaft can be quickly detected through high resolving power to control the shaft to keep small deflection. Thus a magnetic bearing device can be applied to a large rotary machine to improve its operational reliability and maintenance ability.